

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P27121/WO Kf	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/012526	International filing date (day/month/year) 10 November 2003 (10.11.2003)	Priority date (day/month/year) 15 November 2002 (15.11.2002)
International Patent Classification (IPC) or national classification and IPC F04B 1/20		
Applicant BRUENINGHAUS HYDROMATIK GMBH		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of _____ sheets.
3.	This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 10 March 2004 (10.03.2004)	Date of completion of this report 03 March 2005 (03.03.2005)
Name and mailing address of the IPEA/EP Facsimile No.	Authorized officer Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/012526

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages _____ 1-12 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages _____ 1-28 _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the drawings:
 pages _____ 1/3-3/3 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-28	YES
	Claims		NO
Inventive step (IS)	Claims	1-28	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-28	YES
	Claims		NO

2. Citations and explanations

Reference is made to the following documents:

D1: DE-A-197 51 994

D2: US-A-5 868 061

D3: US-A-4 111 103

D4: EP-A-1 251 270

- 1 D1 is considered the prior art closest to the subject matter of claim 1. D1 discloses (the references in parentheses relate to said document): A swash plate (50) for an axial piston machine (10), said swash plate (50) being disc-shaped in design and having a central bore (60) which is surrounded by a collar (62) extending from a first surface (64) of the swash plate (50) with an axial direction component, and wherein the swash plate (50) has a plurality of sliding block receiving openings (66).

The subject matter of claim 1 differs therefore from the known swash plate in that the sliding block receiving openings are each encompassed by a guide collar which extends contrary to the collar of the central bore with an axial direction component.

The subject matter of claim 1 is therefore novel (PCT Article 33(2)).

The problem addressed by the present invention can therefore be considered that of producing a swash plate for an axial piston machine that is simple to manufacture and reduced in weight whilst functioning better. The solution to this problem proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:

D1-D3 give an overview of different designs of swash plates for axial piston machines. It appears that such swash plates have hitherto always had sliding block receiving openings without encompassing guide collars and that the swash plates instead have been produced with thick material strength. It was not possible to find any prior art document in which this was not the case. Given this context, it cannot necessarily be supposed that the claimed solution constitutes an obvious option.

D4 discloses an axial piston machine with a perforated plate which is used as a retaining device for the piston heads. This perforated plate has a central bore and a plurality of piston head receiving openings which each are comprised of guide collars. Despite their similarity to the claimed swash plate, it cannot be assumed that the guide collars in this case are used for the same purpose, since the perforated plate here carries out a different function to the swash plate. The claimed features are therefore not obvious from D4.

- 2 Independent claim 12 relates to an axial piston machine containing a swash plate according to claim 1. Independent claim 23 relates to the method for producing this swash plate. The subject matter of claims 12 and 23 is therefore novel (PCT Article 33(2)) and likewise involves an inventive step (PCT Article 33(3)).
- 3 Claims 2-11, 13-22 and 24-28 are each dependent on claims 1, 12 and 23 and therefore likewise meet the PCT novelty and inventive step requirements.